Birth Defects

In Mississippi

Annual Report

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Introduction

The Mississippi State Department of Health published this report to help health workers and families learn more about birth defects. Until now, there has been no collective way of determining the rates or nature of child birth defects throughout Mississippi. Through the statewide Birth Defects Registry the Mississippi State Department of Health now compiles all of the raw data of the state's birth defects into a useful report that is available to everyone. This report will hopefully increase knowledge of the nature of birth defects and their severity. Also, it will highlight selected current preventive, screening, and treatment measures.

In this report

This report contains information on the state's children with birth defects for the year 2000. It describes certain defects and groups of defects, and indicates how often these defects occur. This information can help maternal and child health workers implement services needed for pregnant women and children with defects, as well as suggest causes and solutions to the problem of birth defects in our state.

Because this is the first birth defects report for the state of Mississippi, it lacks statistical trends that might yield patterns of defects over time. In years to come, however, patterns will be examined and conclusions drawn that will help target prevention efforts for selected defects.

Mississippi Birth Defects Surveillance Facts

Birth defects account for over a fifth of all infant deaths in the United States, making them the number one cause of infant death in the nation. *Birth defects,* as defined by the Mississippi State Department Of Health, is an abnormality of structure, function, or metabolism, whether genetically caused or a result of outside factors during a child's developmental or fetal life. A birth defect may be present from the time of conception or birth, or may become evident later in the child's life. It is also important to remember that birth defects vary greatly in their effects on children and their families. Despite the setback and difficult challenges they face, children with birth defects contribute much to the lives of their families, communities, and our nation, and they retain a wide range of abilities.

The causes for many defects are uncertain. However, environmental factors, medications, diet habits, and personal behaviors have been identified as possible contributors to these defects. While much is still unknown concerning the causes of birth defects, there is a growing amount of information regarding the measures that can be used to prevent them.

The Mississippi State Department Of Health, in accordance with Section 41-21-205 of the Mississippi Code, has created the Mississippi Birth Defects Registry for surveillance and to further the research into the causes of birth defects. In addition, the Registry will be used to increase awareness of preventive measures that can reduce the risk of defect occurrence. In doing so, we can better understand and prevent birth defects, as well as identify the risks that are specific to Mississippi.

Goals of the Birth Defects Surveillance Program are:

- To create a scheduled system to monitor the births of children with defects to find any patterns that might suggest preventable causes.
- To prevent further disabilities by helping families of children with birth defects find appropriate health providers.
- To inform health workers and doctors about available resources for these families of children with birth defects.
- To develop a case registry for use in studies that look at the incidence and patterns of birth defects across the population, as well as those studies that look at the genetic causes for such defects.

While the Birth Defects Registry population consists of all residents of Mississippi, this report focuses primarily on live births and stillbirths in the state. Data contained in this report are confidential, and the identities of all persons in the Birth Defects Registry are protected. Reporting sources are not liable for providing required information to the Registry.

Surveillance Methods

The Mississippi State Department Of Health, through the Division of Genetic Services, monitors all birth defects among Mississippi residents born on or after January 1, 2000. For the year 2000, the Mississippi Census Bureau estimated the state population to be 2,2844,658 and there were 44,075 live births.

By law, birth defects must be reported in children and adolescents from birth through age twenty, and in fetuses of at least 20 weeks of gestation or a weight at or above 350 grams. Defects are reported primarily by means of designated ICD-9 codes obtained through discharge summaries from hospitals. Reports also come from Mississippi State Department Of Health registries such as the Newborn Screening Registry, Vital Records Birth and Death Registries, the Cancer Registry, and the Newborn Hearing Registry. Doctors and other health workers may report birth defects by completing a birth defect reporting card supplied by the Health Department.

All birth defects that are reported are added to the Birth Defects Registry. However, each birth defect must be confirmed before it is included as a case. Defects are usually confirmed by review of hospital medical records and/or consultation with the physician.

Birth Defect Groups

Head, Ears, Eyes, Nose, and Throat (HEENT)

Musculoskeletal

Cardiovascular and Respiratory

Gastrointestinal

Genitourinary

Neurological

Endocrine

Metabolic and Chromosomal

Hemoglobinopathies

Other Defects

Defects Of The Head, Ears, Eyes, Nose, and Throat (HEENT)

HEENT – This group involves defects of the head, ears, eyes, nose, and throat. These defects include cleft palate and cleft lip, which occur when the the mouth fails to form in a correct way. Also involved in this group are hearing defects, such as hearing loss and deafness. Other defects include microtia (small ears), microstomia (small opening of the mouth), aniridia (the lack of the eye's iris), and retrolental fibroplasia ("low vision") in which children can see some objects and visual cues but not others.

Common Defects	Mississippi Rate Per 10,000
Cleft Lip	7.9
Cleft Palate	7.3

Common Defects	Mississippi Rate Per 10,000
Hearing loss	2.9

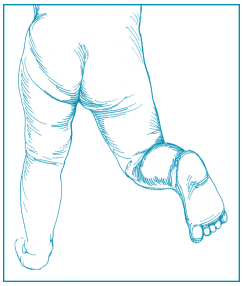
Cleft palate — the second most common inborn defect in Mississippi, occurs in about 14 of 10,000 births. This defect occurs during fetal development when the two sides of the roof of the mouth do not join, leaving a gap instead. There is a doubled risk of cleft palate for children whose mothers are over 35 years of age, and the risk triples when mother is over 39. Babies with cleft palate often have trouble eating, because the tongue cannot push up against the palate when the baby swallows. Dental problems can also occur from this defect, and in severe cases the child can suffer from fluid buildup in the ear, which can result in hearing loss. It is not known for certain what factors may affect the chances of cleft palate onset, but studies have shown that folic acid can reduce the chances of cleft palate. Surgery and orthodontic tasks over the first few years of the child's life can help correct the adverse effects of cleft palate and other cleft defects.

Hearing loss — another very common birth disorder which affects 16,000 babies each year across the nation. Fortunately, newborn hearing screening is available at every Mississippi hospital in which more than 100 babies are born each year. The purpose of the hearing screening is to find children with hearing loss at an early age so that proper treatment can be given. Failing the screening test does not automatically mean that there is hearing loss; the problem may simply be that there is still fluid in the ear and that a follow-up is necessary to determine if there is really a problem. If a baby fails the screening test three separate times, the infant will be referred to a licensed audiologist. If a true hearing problem is then found, the child will be referred to a doctor who will test him or her for hearing problems that can be treated. If the hearing loss cannot be treated, a hearing aid may be prescribed to fit the child's special hearing needs.

Musculoskeletal

Musculoskeletal – Defects that affect the muscular or skeletal system are in this group. These defects can affect any bone or muscle of the child's skull, face, spine, hips, legs, and feet. Many of the defects in this group are linked with limb or digit problems, such as having extra of these parts of the body or not having them at all. These problems can be caused by chromosomal defects or by single gene defects, although outside factors may also increase the risk of these defects. Among these outside factors is the drug Thalidomide that is used to treat leprosy. Women who take vitamins that contain folic acid have a 36% lower chance of having babies with limb defects. Surgery, physical therapy, and the use of prosthetics are common treatments to musculoskeletal defects.

Common Defects	Mississippi Rate Per 10,000
Polydactyly of the fingers	31.1
Congenital Hip Dislocation	3.9



In the state of Mississippi the most common defect of this type for the year 2000 was *Polydactyly of the fingers,* in which the child is born with more than 10 fingers. This defect occurs in about 20 of every 10,000 children nationwide, and can occur by itself or with other problems such as disease. Likely causes are family heredity, chromosome problems, and environmental factors. Surgical measures can often be used to remove the extra digits and allow the child to function normally.

Another important condition in this group is hip dislocation, a developmental process that is not always noticed at birth. It involves an abnormal forming of the hip joint which can lead to the dislocation, and even normal hips at birth may become abnormal later in life. Hip dislocation occurs at a rate of 15 per 10,000 children in the United States, and is 8 times more common in girls than in boys. Over 25 percent of children with this problem have it in both hips, and it is found more often in whites than in blacks. This condition leads to decreased movement of the hip, a shortened leg, a waddling type of gait, other structural and movement problems, and pain. This defect is often caused by the child's genetic makeup and the position of the child within the mother's womb. If the hip problem is found at birth, there are special harnesses and splints that can help correct the condition. If the problem is found in an older infant from 6 to 18 months of age, the main method of treatment is manual correction under general anesthesia. After 18 months of age, open surgery is often needed. Therefore, the earlier the condition can be detected, the less intensive the treatment will be.

Cardiovascular and Respiratory

Cardiovascular and Respiratory — Heart defects are the most common type of birth defect, as they occur in about 1% of all babies born in the United States. In Mississippi the rate is about 87 of every 10,000 babies. Heart defects can be divided into two groups: structural and conductive. Structural heart defects are those that involve physical abnormalities of the heart. Conduction heart defects are those that result in abnormal heart rates or blood flow. The most common heart defects are structural: atrial septal defects (ASDs) (a hole in the septum, or wall, between the top two chambers of the heart, called the atria), ventricular septal defects (similar to ASDs, but where the hole is in the wall between the ventricles, or lower chambers of the heart), patent ductus arteriosus (described below) and cardiac valve abnormalities (problems with the heart valves).

Common Defects	Mississippi Rate Per 10,000
Patent ductus arteriosus	46.7
Ventricular Septal Dislocation	26.8
Agenesis of the lung	5.2

Respiratory defects are those that affect the lungs, diaphragm, or any other part of the respiratory system. A typical defect of this type is agenesis of the lung, in which one of the child's lungs does not form at all. This problem can lead to an uneven chest volume, as well as an increase in size of the other lung. If both lungs are absent, the child cannot live.

The defect of this group that occurs most often in Mississippi is *patent ductus arteriosus*, which occurs in about 12 of every 10,000 live births nationally. This defect is the failure of an opening between the aortic arch and the lung artery to close after birth, which lets blood flow into the lung artery instead of going to the rest of the body. The result is increased heart rate and a decrease in the level of oxygen in the blood to some parts of the body, especially the legs. Children with this problem often have stunted growth and heavy breathing after small amounts of physical activity. Fortunately, surgery can correct this disorder and allow the child to live a normal life.

Ventricular Septal Defects (VSDs) — are the most common form of inborn heart disease. They involve a hole in the wall between the right and left ventricles of the heart. This condition occurs in 15 to 35 full term live births per 10,000, and in 45 to 70 premature infants per 10,000. This defect can lead to heart dilations, a weakened heart, and an increased pressure in blood vessels due to increased blood flow. Causes for VSDs include hereditary and environmental factors. While some VSDs close on their own in time, many will remain open and require surgery to close them. If the defect is not corrected in time, permanent changes will take place in the arteries such that even closing the hole will no longer help the child.

Gastrointestinal

***Gastrointestinal* —** This group of defects includes those that occur along the gastrointestinal tract. Defects may exist in the esophagus, stomach, small or large intestine, rectum, or anus. Often, these defects occur when the baby's organs do not form properly, and most gastro-intestinal defects must be treated with surgery. Gastrointestinal defects include those of the abdominal wall, in which the infant's stomach or other organs protrude from the body. This condition is known as gastroschisis. Gastroschisis requires immediate surgery and intensive medical care to prevent infection. If possible, the baby's organs are replaced within the abdominal wall. These defects occur in about five in 10,000 live births nationally.

Common Defects	Mississippi Rate Per 10,000
Pyloric Stenosis	14.1
Atresia of large intestine	3.4

The most common defect of this group in Mississippi is pyloric stenosis. The pylorus is the muscle at the bottom of the stomach that food passes through to get to the small intestine. Pyloric stenosis is a disorder in which this muscle thickens, making it harder for food to pass throught. Symptoms include severe dehydration and forceful vomiting. Children with this defect often fail to gain weight, and they become very hungry after vomiting. Like many gastro-intestinal defects, pyloric stenosis requires surgery to correct it. Fortunately, these measures are often successful.

Another defect in this group is atresia of the large intestine, in which the child's large intestine becomes very narrow and causes the bowel to become blocked. This defect can occur in up to 7 in 10,000 live births. Some symptoms of this defect include vomiting, abnormal X-rays of the baby's stomach, discomfort and crying, and lack of appetite. The cause of all types of intestinal atresia is unknown. Surgery is needed to cut out the blocked section of the intestine to allow proper passage.

Genitourinary

Genitourinary – These defects include all birth defects of the genitals or urinary tract, including the kidneys, urethra, bladder, and male and female sex organs. Some of the most common defects include renal agenesis (the absence of the kidneys), hydronephrosis (swelling of the kidneys due to obstructed urine flow), hypospadias (misplaced urinary openings below the normal location), and ambiguous genitals (occur when the outer genitals do not have the typical appearance of either sex). Like heart defects, genitourinary problems are among the most common birth defects. In Mississippi, this type of defect occurs in 75 of 10,000 babies.

Common Defects	Mississippi Rate Per 10,000
Undescended testicles	20.4
Hypospadias	11.8

In Mississippi, the most common defect of this type is the undescended testicle. This defect occurs when the infant's testicle does not move from the abdomen into the scrotum. While fairly common in premature infants, this defect, also known as cryptorchidism, can occur in up to 5% of all full term baby boys. Some hormonal drugs may correct this problem, but a cure from these drugs is rare. Surgery usually must be carried out to correctly place the testicle and anchor it in the scrotum. If the undescended testicle is not corrected, this defect could lead to greater problems for the child, including hernia, cancer, problems with fertility, and a greater risk of testicle injury.

Another important defect of this group is *hypospadias*, in which the opening through which urine passes is lower than it should be. This defect affects 40 of 10,000 newborns. Nearly 1 of every 100 males is born with hypospadias, and this can lead to problems with cosmetics, urination, and later erection. The defect can also result in a downward bowing of the penis called chordee. While there is no clear cause of hypospadias, some possibilities include heredity and drug use during pregnancy. Hypospadias can be corrected with one or two surgeries, and early repair is preferred to avoid patient embarrassment that may occur later in life.

Neurological

Neurological – Defects of the nervous system include those affecting the brain, spinal cord, or other parts of the central nervous system. One of the more serious defects of this type is neurofibromatosis, a genetic disorder that causes tumors to grow along certain types of nerves. These tumors hinder the development of bone and skin tissues, and can also cause learning disabilities for the child. Also included in this group are anencephaly (absence of the brain), hydrocephalus (caused by blocked flow of spinal fluid), and microcephaly (smallness of the head). Nervous system defects occur at different rates across the nation, but happens in 43 out of every 10,000 babies in Mississippi.

Common Defects	Mississippi Rate Per 10,000
Hydrocephalus testicles	10.4
Microcephalus	8.6
Neural Tube Defects (NTDs)	6.0

The most common neurological defects in Mississippi for 2000 are *hydrocephalus* and *microcephalus.* The main symptom of hydrocephalus is the abnormal buildup of spinal fluid in the brain. This defect occurs in 5 in 10,000 live births across the nation. While there is no known way to cure or prevent hydrocephalus, surgery, though often leading to infection, can be used to treat this problem and help the child lead a normal life. *Microcephalus* is a very rare disease in which the child has a small head, a receding forehead, and large ears and nose. Though sometimes caused by chromosomal or genetic factors, this problem can also be caused external factors such as maternal drug-use and a high protein diet during pregnancy. Many children with microcephaly are also mentally retarded. There is no known cure for microcephalus, and treatment is primarily therapeutic, including ways to help the child with normal feeding, movement, and speech.

Also included in this group are neural tube defects (NTDs), which involve incomplete development of the brain, spinal cord, or their protective coverings. Among the NTDs is spina bifida, the most common of these defects wherein the covering over the backbone does not close, leaving the baby's backbone exposed. Children with spina bifida may have permanent nerve damage, which can result in varied levels of paralysis. The baby's movement is hindered, and learning problems are frequent later in life. Spina bifida can also lead to bladder and bowel problems, and many children with this disorder also have hydrocephalus. Treatment for spina bifida may include medication or surgery, wheel chairs or braces to assist the child, or ongoing therapy and medical care. While there is no cure for spina bifida due to its permanent effects, *folic acid* is one of the most effective preventive measures against this disorder and other NTDs. By taking folic acid before and during early pregnancy, mothers can greatly reduce their chances of having children afflicted with these defects.

Endocrine

Endocrine – The endocrine system is composed of a series of glands that affect the body's functions. These glands produce hormones and other fluids that control various parts of the body. A common defect of this category is hypothyroidism, a defect in which the thyroid gland, found just below the Adam's apple, fails to release enough hormones for the body and interferes with the child's metabolism. Infants and young children with hypothyroidism often experience developmental problems.

Common Defects	Mississippi Rate Per 10,000
Hypoglycemia	2.3

Common Defects	Mississippi Rate Per 10,000
Hypothyroidism	8.4

One of Mississippi's most common defects in this group is hypoglycemia, a disorder in which the child has a very low level of blood sugar (glucose), which is the main energy source for the human body. Across the nation, hypoglycemia is very rare and found mostly in whites. This defect is very harmful to younger babies, as they are more likely to become mentally retarded than those with a later onset of disorder. Hypoglycemia may also cause behavior changes, confusion, seizures, anxiety, hunger, increased heart rate or blood pressure, loss of consciousness possibly leading to death, and other symptoms. Specific causes of hypoglycemia in newborns are mostly unknown, but some possibilities include endocrine problems, tumors, and certain illnesses. Treatment for this defect includes an immediate balance of blood sugar level, as well as long-term treatment of the condition that is causing the hypoglycemia.

Mississippi, through newborn screening, tests for certain endocrine problems in babies. These disorders include hypothyroidism, a defect described above, and congenital adrenal hyperplasia (CAH), a defect in steroid hormone production. If they are found early in the baby's life through newborn screening, both of these defects can be treated with medication or hormone replacement.

Metabolic and Chromosomal

Metabolic and Chromosomal – Chromosomal abnormalities result from missing (monosomy) or extra (trisomy) genetic parts during a baby's development. This can lead to structural, physical, and mental defects within the child.
Some of the most common chromosomal defects include Trisomy 21, or Down syndrome, Trisomy 13, and Trisomy 18. There is about 1 chromosomal defect per 500 children, and Mississippi exhibits a rate of one in 300 newborns for this category of defects. Metabolic disorders are less frequent, occurring in about 1 in 3500 infants, and are those defects that hinder the child's processes of chemical breakdown and construction that are necessary for normal development and living.

Common Defects	Mississippi Rate Per 10,000
Down Syndrome	8.4
Dissacharidiase deficiency	5.0

Common Defects	Mississippi Rate Per 10,000
Galactosemia	2.0
Phenylketonuria	0.5

The state's most common defect in this group is *Down syndrome*, which occurs in about 15 of 10,000 newborns in the nation. This defect results from the child having three copies of chromosome 21 instead of the normal two. The risk for this defect varies greatly with the mother's age, as older mothers (over age 35) are more likely to have children with Down syndrome. Children with this defect have problems in both their physical and mental development. The average intelligence quotient (IQ) for a child with Down syndrome is about 50, while a normal IQ is 100. However, abilities among people with Down syndrome vary widely. Some of the physical traits of children with Down syndrome include a small head, with a broad flat face and slanting eyes. The nose is short and the tongue is large, while the ears are small and low set. Children with Down syndrome may have heart defects. Little is known as to how the chromosome error occurs and why the extra chromosome leads to Down syndrome. While there is no known cure for Down syndrome, there have been great advances toward lowering the disease risks and increasing the life expectancy for individuals with this disorder.

Another common defect of this type is disaccharidase deficiency. This defect involves the lack of certain enzymes needed for the body to absorb carbohydrates. This leads to problems digesting foods with carbohydrates in them. If these foods are eaten, it can cause diarrhea, stomach pain, and cramps. The most common enzyme is lactase, which is necessary to digest milk and other dairy foods.

Mississippi tests for two metabolic disorders in babies through newborn screening. These disorders are galactosemia, in which the baby cannot digest milk, and phenylketonuria (PKU), a genetic disorder that prevents proper brain development. If these conditions are detected early in the baby's life, both can be treated with a special diet to avoid serious medical problems.

Hemoglobinopathies

Hemoglobinopathies – This group involves genetic defects in which there is an error in the making of hemoglobin. Hemoglobin is the part of red blood cells that carries oxygen in the body. The two main conditions in this category are sickle cell trait and sickle cell disease. While these conditions are related, there is an important distinction between them.

Common Defects	Mississippi Rate Per 10,000
Sickle Cell Trait	193.5
Sickle Cell Anemia	5.0
Hemoglobin SC Disease	3.4
Thalassemias	1.4

Sickle cell trait is not a disease and cannot become disease. It is a genetic characteristic of a person who has one normal hemoglobin gene and one sickle cell gene, making this person a sickle cell "carrier." People with sickle cell trait have no symptoms and are not sick. However, if both parents are sickle cell trait carriers, they are at risk of having children with sickle cell disease. In the United State one of 12 blacks are carriers of sickle cell trait. But although this condition is more common in blacks, it occurs in many other races as well.

Sickle cell disease, on the other hand, includes three main types: Thalassemias, Sickle Cell Anemia, and Hemoglobin SC Disease. All of these are lifelong, inherited blood diseases marked by anemia, or low red blood cell count. Thalassemias are diseases in which the child cannot produce enough globin, which leads to severe destruction of red blood cells and can cause death in developing babies. Sickle Cell Anemia and Hemoglobin SC Disease cause red blood cells to change from healthy and round-shaped to sickled crescent-shaped. Because of their curved shape, these sickle cells often stick together and clog small blood vessels throughout the body. Children with any of these diseases may suffer from pain episodes, stroke, infections, pneumonia, organ damage, blindness, ulcers, gallstones, and jaundice. Sickle cell disease is caused by the production of a defective form of hemoglobin within red blood cells that causes these cells to sickle after they release oxygen to the body. At the present time there is no known cure for sickle cell disease, though treatment can relieve symptoms and prolong life. Some treatments include medications, supplied oxygen, blood transfusions, and bone narrow transplants.

Mississippi screens newborns to test for certain hematological problems, including Thalassemia, Sickle Cell Anemia, and Hemoglobin SC Disease. All of these diseases, if found early in the baby's life through newborn screening, can be treated with medication to help the child lead a mostly normal life. Babies who have sickle cell traits are also detected and identified as a result of newborn screening, and genetic counseling can then be provided for the parents.

Other

Common Defects	Mississippi Rate Per 10,000
Skin pigment	64.0

Other — This broad category includes many other defects that are not found in the other groups, including defects of the skin, blood and certain tissues, defects involving noxious influences, and other disorders. A very common defect in this group is skin pigment anomalies. These anomalies may include different types of marks that appear on the baby's skin at birth. Hemangiomas are one type of these anomalies. These birthmarks are bright red and can be large and unsightly. Other marks, called *cafe'-au-lait spots*, are typically darker than the surrounding skin and are often the color of coffee with cream. *Cafe'-au-lait spots* have been associated with neurofibromatosis, a disorder of the nervous system that causes benign tumors to form on nerves in the body. Children with five or more cafe'-au-lait spots are considered at risk of having neurofibromatosis.

Birth Defects For Year 2000

Birth Defect Description	ICD 9 Code	#Confirmed	Rate*
Head, Ears, Eyes, Nose & Throat (HEENT)			
Retrolental Fibroplasia	362.21	146	33.1
Accessory Auricle	744.10	26	5.9
Preauricular Sinus/Fistu	744.46	25	5.7
Cleft Palate Nos	749.00	24	5.4
Spec Lacrimal Pass Anom	743.65	22	5.0
All HEENT with <20	Others	160	36.3
		403	*91.7*
Musculoskeletal			
Polydactyly, Fingers	755.01	137	31.1
Anomal Skull/Face Bones	756.00	52	11.8
Congn Anonl ABD Wall NEC	756.79	39	8.8
Talipes Nos	754.70	37	8.4
Talipes Equinovarus	754.51	32	7.3
Cong Hip Sublux, Unilat	754.32	30	6.8
Cong Hip Deformity Nec	755.63	23	5.2
All Musculo Skeletal with <20	Others	227	51.5
		557	*130.9*
Cardiovascular & Respiratory			
Patent Ductus Arteriosus	747.00	206	46 7
Ventricular Sept Defect	745.40	118	26.8
Secundum Atrial Sept Def	745.50	104	23.6
Circulatory Anomaly Nec	747.89	90	20.4
Lung Anomaly Nos	748.60	67	15.2
Pulmonary Artery Anom	747.30	51	11.6
Cong Heart Anomaly Nec	746.89	36	8.2
Laryngotrach Anomaly Nec	748.30	26	5.9
Agenesis Of Lung	748.50	23	5.2
Cong Pulmon Valve Stenos	746.02	20	4.5
All Cardiovascular & Respiratory with <20	Others	227	51.5
		968	*219.6*
Gastro-Intestinal (GI)			
Cong Pyloric Stenosis	750.50	62	14.1
All gastro-Intestinal (GI) with <20	others	82	18.6
		144	32.7

Birth Defect Description	ICD 9 Code	#Confirmed	Rate*
Genital-Urinary (GU)			
Undescended testis	752.51	90	20.4
Hypospadias	752.61	52	11.8
OBST DEF REN PLV & URT NEC	753.29	47	10.7
Cystic Kidney Disease NEC	753.19	21	4.8
All Genital-Urinary (GU) with<20	Others	139	31.5
		349	79.2
Neurological			
Obstructiv Hydrocephalus	331.40	41	9.3
Microcephalus	742.10	38	8.6
Congenital Hydrocephalus	742.30	30	6.8
All Neurological with <20	Others	89	20.2
		198	44.9
Endocrine			
All Endocrine with <20	Others	32	7.3
		32	7.3
Metabolic & Chromosomal			
Down Syndrome	758.00	37	8.4
Disaccharidas DEF/MALAB	271.30	22	5.0
All Metabolic & Chromosomal with <20	Others	71	16.1
		130	29.5
Hemoglobinopathies			
Sickle-Cell Anemia Nos	282.60	27	6.1
Sickle-Cell/HB-C Disease	282.63	26	5.9
All Hemoglobinopathies with <20	Others	36	8.2
		89	20.2
Other			
Cong Skin Pigment Anomal	757.33	282	64.0
Vascular Hamartomas	757.32	62	14.3
Skin Anomaly NEC	757.39	42	9.5
Breast Anomalies NEC	757.60	29	6.6
Noxious Subst NEC AFF NB	760.79	59	6.1
All other with <20	Others	54	12.3
		497	112.8
Year 2000 Totals		**3,387**	**768.5**

Rate per 10,000 Population:

Number Of Confirmed Birth Defects/Total Births In The State (44,075) x 10,000

Important Information For Parents And Parents-To-Be

Before Pregnancy:

- Parents should plan for their baby's health *before* pregnancy. There are important facts that parents-to-be should discuss with their health care provider prior to having a baby.
- Women who may possibly become pregnant should take a daily dose of 400 micrograms of *folic acid.* By taking vitamins and eating foods that contain folic acid, women can help reduce the chances of their children being born with serious birth defects of the brain, spine, and palate. However, because these defects form early in the pregnancy (the first four weeks — before most women know they are pregnant), it is very important that all women take folic acid before they become pregnant. (Note: Women who have previously had a baby with a defect of the brain, spine, or palate should take 10 times the recommended daily dose — or 4 milligrams of folic acid each day.)
- A healthy diet is very important for mothers-to-be. Women should be within 15 pounds of their ideal weight before they become pregnant. Being overweight or underweight during pregnancy can lead to problems.
- Women should get all needed vaccines such as rubella and chicken pox before their pregnancy. Certain vaccines can affect a baby's development if given at the wrong time.

During Pregnancy:

- Pregnant women should take iron supplements to prevent anemia.
- Exercise is good for both pregnant women and their babies, as it can help reduce fatigue and speed recovery after birth. Exercise also promotes a sense of well-being and decreases the stress of pregnancy.
- Medical conditions like diabetes, epilepsy, and high blood pressure should be treated before and during pregnancy.
- Some prescription and over-the-counter drugs may be harmful to a developing baby. Pregnant women should check with their doctor before taking medication.
- X-ray should be avoided during pregnancy.
- Toxic chemicals such as those found in cleaning agents, paint, and some insecticides should be avoided as well. Pregnant women should wash all fresh fruits and vegetables to cleanse them of any possible insecticide residue.

- Using alcohol, cigarettes, and illicit drugs during pregnancy can cause very serious problems for a developing child. Even small amounts of alcohol or drugs can cause learning problems and behavioral disorders in the newborn. Cigarette smoking and second-hand smoke can also lead to many problems, including low birth weight, miscarriage, and infant mortality.
- Pregnant women should avoid contact with raw meat and cat feces (both are sources of toxoplasmosis).
- Avoid risky sexual practices. Sexually transmitted diseases such as syphilis, herpes, gonorrhea, chlamydia, and HIV can harm the baby.

Things to discuss with a health-care provider:

- Preconception and prenatal care
- Changes in diet
- Which vaccines to take and when to take them
- What kinds of exercise are acceptable during pregnancy
- The type of medications being taken by the mother for any medical problems or sickness
- *Anything* that is unclear or of concern regarding the pregnancy

Mississippi State Department Of Health